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Looking Again, and Harder, for a Link Between Low Self-Esteem and Aggression

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ABSTRACT Recent field studies have revived the hypothesis that low self-esteem causes aggression. Accordingly, we reanalyzed the data from a previous experiment and conducted a new experiment to study direct physical aggression in the form of blasting a fellow participant with aversive noise. We also conducted a field study using a measure of indirect aggression in the form of a consequential negative evaluation. High narcissists were more aggressive than others but only when provoked by insult or humiliation and only toward the source of criticism. The combination of high self-esteem and high narcissism produced the highest levels of aggression. These results support the view of aggression as stemming from threatened egotism and are inconsistent with the hypothesis that low self-esteem causes either direct or indirect aggression.

Think of the most aggressive, confrontational, violent person you have known. How would you describe that person? In particular, would you describe that person as low in self-esteem: shy, modest, full of self-doubt, prone to go along with others and yield to influence, lacking a well-formed concept of self? Or, instead, was the person rather the opposite: bold, assertive, egotistical, self-assured to

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the point of stubbornness, confident of self-knowledge, and always ready to feel superior to others?

One longstanding view in psychology has held that low self-esteem is a trait that predisposes people to aggressive behavior, possibly because feelings of inferiority make people want to harm those they see as better than themselves (e.g., Horney, 1950). However, a literature review by Baumeister, Smart, and Boden (1996) found no evidence for the view that low self-esteem causes aggression and proposed, instead, that aggression stems mainly from threatened egotism, which is to say the sense that one's favorable views of self have been impugned by others. Bushman and Baumeister (1998) supported the threatened egotism hypothesis with experimental findings that the highest rates of aggression came from the combination of high scores on the trait of narcissism (encompassing self-love, entitlement, and admiration seeking; Morf & Rhodewalt, 2001) and ego threat.

Recent work has sought to revive the view that low self-esteem causes aggression. Most notably, a pair of longitudinal field studies by Donnellan, Trzesniewski, Robins, Moffitt, and Caspi (2005) reported that children scoring low on self-esteem reported more delinquent behaviors, including two items assessing fighting, and a third study showed that low self-esteem correlated with high scores on a trait aggression scale among college students (also see Trzesniewski, Donnellan, & Moffitt, 2006). Those authors proposed that low self-esteem and high narcissism might contribute separately to aggression, though the effects may be small and hence easily overlooked. These findings raise the possibility that low self-esteem may cause aggression and that the data analysis strategies used by Bushman and Baumeister (1998) were inadequate.

For these reasons, we reanalyzed data from our previously published work and ran two new studies. The resurgent traditional view would predict that low self-esteem would produce the most aggression. In contrast, the threatened egotism hypothesis would predict that, if anything, high self-esteem (along with narcissism) would produce the most aggression.¹ This aggression would be produced under high levels of ego threat, directed toward the person responsible for the threat.

1. In our initial *submission* of the Bushman and Baumeister (1998) manuscript, we did report the interaction between self-esteem and narcissism. Because the effects were only marginally significant and journal space is precious, the editor asked us to delete these analyses and to report that there were no significant main effects or interactions involving self-esteem. We reluctantly followed the editor's suggestion.

Thus, the two views agree about the contribution of high narcissism to aggression but disagree about the impact of self-esteem. Intuitive and lay impressions may suggest that all narcissists must have high self-esteem, but in fact clinically based theories have suggested that there are multiple varieties of narcissists that differ in their level of self-esteem (Dickinson & Pincus, 2003; Kernberg, 1975; Kohut, 1977; Rose, 2002). So-called *covert narcissists* have relatively low self-esteem and have been described as socially avoidant individuals who are self-absorbed yet shy and introverted. In contrast, *overt narcissists* have much higher self-esteem and are described as self-assured extraverts who have a dominant, antisocial, and aggressive interpersonal orientation. Wink (1991) provided strong data to distinguish what he called “two faces of narcissism” in an eponymously titled article. Most relevant to the present debate, Wink found that aggression was mainly associated with the grandiose, self-assured, overt form of narcissism. Thus, we predict the highest levels of aggression among people with high self-esteem and high narcissism.

STUDY 1

We reanalyzed the data from Study 2 reported by Bushman and Baumeister (1998). We focused on Study 2 because of one weakness in the data from Study 1—namely, the coefficient alpha for the Rosenberg (1965) Self-Esteem Scale was unacceptably low ($\alpha = .55$) in that study. Nonetheless, we did conduct a reanalysis of Study 1, and its results were quite similar to what we report here for Study 2.

Method

In brief, participants were 280 undergraduates (140 women) who completed measures of narcissism and self-esteem. Narcissism was measured using the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988; coefficient $\alpha = .80$). It consists of 40 forced choice binary items (e.g., “If I ruled the world it would be a much better place” vs. “The thought of ruling the world frightens the hell out of me”). Narcissistic responses are summed, with higher scores indicating higher levels of narcissism.

Self-esteem was measured using 26 items from the Janis and Field (1959) self-esteem scale (coefficient $\alpha = .93$). These items comprised the first three subscales from the revised version of that scale by Fleming and Courtney (1984) but omitted the physical attractiveness and physical coordination subscales, which has been the consistent practice in

Baumeister's research (e.g., Baumeister, Heatherton, & Tice, 1993). Sample items include "How often do you dislike yourself?" and "How confident do you feel that someday the people you know will look up to you and respect you?" Items were answered using a 7-point response format. Scores are summed, with higher scores indicating higher levels of self-esteem.

Next, participants were randomly assigned to receive either negative or positive feedback on an essay they wrote dealing with a controversial topic (abortion). The negative feedback was the ego threat. Participants then competed with an ostensible partner on a competitive reaction time task. The winner got to blast the loser with loud noise through a pair of headphones. The partner on this task was said to be either the person who evaluated their essay (direct aggression) or an innocent third party (displaced aggression). Last, participants were debriefed.

Results and Discussion

Table 1 presents the means, standard deviations, and correlations separately for each of the four treatment conditions and for all conditions combined. In the overall sample ($N = 280$), we note that self-esteem and narcissism have a significant positive relationship, $r = .33$, but that neither self-esteem nor narcissism predicted aggression (in terms of zero-order correlations).

We then entered Self-esteem, Narcissism, Threat, Aggression Target, and their interactions into a regression equation predicting aggression (see Aiken & West, 1991). The continuous predictor variables, self-esteem and narcissism, were mean centered to increase interpretability. For the manipulated variables, low ego threat and displaced aggression were coded -1 , whereas high threat and direct aggression were coded $+1$ (see West, Aiken, & Krull, 1996). Given the limited power of multiple regression analysis to detect interactions between measured continuous variables (Aiken & West, 1991; Chaplin, 2007; McClelland & Judd, 1993), we report all effects in our analyses involving self-esteem, narcissism, and their interactions. Our focus here is on the central effects of interest related to the threatened egotism hypothesis and the resurgent traditional view. Following the report of the complete set of studies, we also report meta-analytic results to provide a more precise summary of the central effects of interest across the three studies.

The results showed effects of Threat, $b = 0.447$, $t(264) = 4.94$, $p < .001$, Narcissism, $b = 0.030$, $t(264) = 1.96$, $p < .06$, Aggression

Table 1
Means, Standard Deviations, and Correlations for Study 1

	Self-Esteem	Correlation Narcissism	Aggression	Mean	SD
Insult, direct ($N = 70$)					
Self-esteem	1.00			118.56	25.01
Narcissism	0.41**	1.00		17.87	6.01
Aggression	0.16	0.26*	1.00	0.74	2.04
Insult, displaced ($N = 70$)					
Self-esteem	1.00			121.70	21.43
Narcissism	0.29*	1.00		20.07	6.89
Aggression	-0.042	0.14	1.00	0.16	1.18
Praise, direct ($N = 70$)					
Self-esteem	1.00			116.94	25.66
Narcissism	0.28*	1.00		18.70	5.75
Aggression	-0.004	-0.097	1.00	-0.74	0.99
Praise, displaced ($N = 70$)					
Self-esteem	1.00			126.01	23.51
Narcissism	0.29*	1.00		20.34	5.51
Aggression	0.09	0.10	1.00	-0.16	1.31
Overall sample ($N = 280$)					
Self-esteem	1.00			120.81	24.08
Narcissism	0.33*	1.00		19.25	6.12
Aggression	0.069	0.10	1.00	0.00	0.99

Note. Threat: Insult = +1, Praise = -1; Target: Direct = +1, Displaced = -1. Aggression scores are standardized.

* $p < .05$, ** $p < .01$.

Target \times Threat ($b = 0.309$, $t(264) = 3.41$, $p < .002$, Threat \times Narcissism, $b = 0.029$, $t(264) = 1.87$, $p < .07$, Aggression Target \times Threat \times Self-esteem, $b = 0.005$, $t(264) = 0.005$, $p = .19$, Aggression Target \times Threat \times Narcissism, $b = 0.024$, $t(264) = 1.56$, $p = .12$, and Threat \times Self-esteem \times Narcissism, $b = 0.001$, $t(264) = 1.58$, $p = .12$. We tested the simple slopes relating narcissism and aggression at high ($M + 1 SD$) and low ($M - 1 SD$) values of self-esteem within the direct aggression target, high threat group where aggression was most likely to be manifested (see Figure 1). When self-esteem was

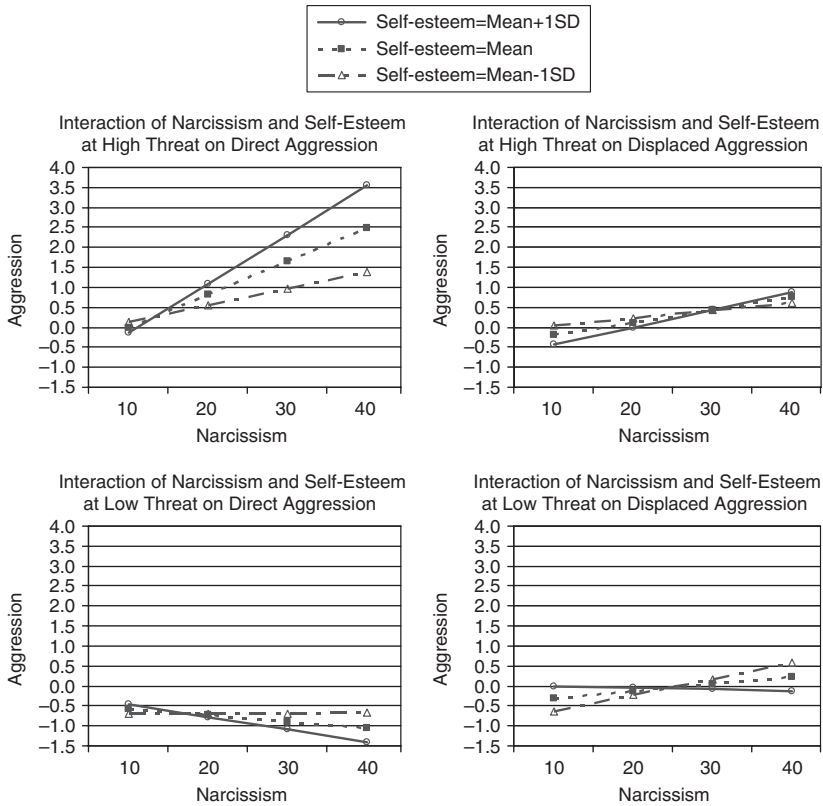


Figure 1

Relationship between narcissism and direct and displaced aggression at high ($M + 1 SD$), moderate (M), and low ($M - 1 SD$) levels of self-esteem in the threat and no threat conditions (Study 1). The intensity and duration of noise given to an ostensible opponent were standardized and summed to form the measure of aggression.

high, there was a positive relationship between narcissism and aggression, $b = 0.12$, $t(264) = 2.43$, $p < .02$, whereas when self-esteem was low, narcissism was not related to aggression, $b = 0.04$, $t(264) = 0.93$, $p < .36$.

Under high threat, high self-esteem combined with high narcissism produced more aggression than the study's overall mean, $t(264) = 4.52$, $p < .001$, $d = 1.05$. In that same high threat condition, meanwhile, the aggression level by participants with low self-esteem plus high narcissism did not differ from the overall mean,

$t(264) = 1.41, p < .16, d = 0.47$. Note that with high threat and a different target (thus displaced aggression), aggression did not differ from the study mean either for participants with low self-esteem and high narcissism, $t(264) = 1.16, p < .27, d = 0.24$, or for those high on both traits, $t(264) = 1.02, p < .31, d = 0.19$.

Following a suggestion by Donnellan et al. (2005), we also tested the link between self-esteem and aggression controlling for narcissism. Across the entire sample after collapsing across threat and aggression target, we found no evidence for a relationship between self-esteem and aggression after partialling out narcissism, $b = 0.003, t(277) = 0.65, p < .52$, semipartial $r = .039$. Given that the study included conditions (low threat, displaced aggression) in which aggression was expected to be low, we also examined the relationship between self-esteem and aggression under optimal conditions for producing aggression. Under conditions in which threat was high in the direct aggression condition, the conditional simple slope relating self-esteem and aggression, controlling for the mean level of narcissism, was $b = 0.010, t(264) = 1.19, p < .24$, semipartial $r = .066$. Note that positive signs of both of these weak semipartial correlations were *opposite* that predicted by Donnellan et al. Thus, we failed to find low self-esteem contributing to aggression. Instead, high self-esteem combined with narcissism and ego threat yielded the most aggression.

STUDY 2

Given the findings of our reanalysis of Bushman and Baumeister (1998), we conducted a new experiment that was a partial replication of the procedures of the original experiment with an independent sample of participants. One goal was replication, in order to ensure that the prior results were not anomalous. Another goal was to increase total statistical power, given the suggestion by Donnellan et al. (2005) that self-esteem effects on aggression may be quite weak and therefore require large samples to detect.

Method

Participants were 132 undergraduates (66 women) who completed the Narcissistic Personality Inventory (Raskin & Terry, 1988; coefficient $\alpha = .86$) and the Janis and Field (1959) Self-Esteem Scale (coefficient $\alpha = .93$). The procedure was identical to the one used in Study 1, except

we eliminated the no threat and the displaced aggression conditions because aggression was quite low in those conditions in Study 1.

Results and Discussion

Table 2 presents the means, standard deviations, and correlations for the overall sample. We note that self-esteem and narcissism were highly related, $r = .56$, $p = .001$, that the correlation between self-esteem and aggression was $.16$, $p = .061$, and the correlation between narcissism and aggression was $.25$, $p = .004$.

We estimated a regression equation in which mean centered self-esteem and narcissism and their interaction were the predictor variables and direct aggression was the outcome variable. The results showed effects of Narcissism, $b = 0.040$, $t(128) = 1.86$, $p < .07$, and Narcissism \times Self-Esteem, $b = 0.001$, $t(128) = 1.79$, $p < .08$.

At high self-esteem ($M + 1 SD$), there was a positive relationship between narcissism and aggression, $b = 0.07$, $t(128) = 2.87$, $p < .005$ (see Figure 2), whereas at low self-esteem ($M - 1 SD$) there was no relationship between narcissism and aggression, $b = 0.01$, $t(128) = -0.38$, $p < .71$ (see Figure 2). High self-esteem in combination with high narcissism produced more aggression than the study's overall mean, $t(128) = 2.37$, $p < .02$, $d = 0.31$.

Probing the suggestion of Donnellan et al. (2005), we found no evidence of an overall relationship between self-esteem and aggression in our sample of high threat participants, after controlling for narcissism, $b = 0.003$, $t(128) = 0.46$, $p < .65$, semipartial $r = .039$. Recall that all participants were assessed under conditions of high threat and direct aggression. Again, in this analysis, the direction of

Table 2
Means, Standard Deviations, and Correlations for Study 2

	Correlation			Mean	SD
	Self-Esteem	Narcissism	Aggression		
Self-esteem	1.00			122.10	23.08
Narcissism	0.56**	1.00		15.82	6.47
Aggression	0.16	0.25**	1.00	0.00	1.34

** $p < .01$.

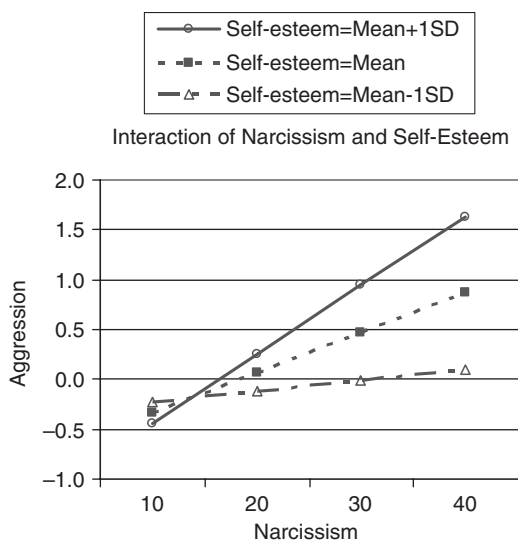


Figure 2

Relationship between narcissism and direct aggression at high (z -score = +1), moderate (M), and low ($M - 1 SD$) levels of self-esteem (Study 2). The intensity and duration of noise given to an ostensible opponent were standardized and summed to form the measure of aggression.

the nonsignificant semipartial correlation was opposite to that predicted by Donnellan et al. Thus, the new results are consistent with what we found a decade ago (though our analyses back then had failed to detect the contribution of self-esteem; see Footnote 1). High self-esteem combines with high narcissism to produce the highest levels of aggression in response to an ego threat.

STUDY 3

Studies 1 and 2 were conducted in a laboratory setting. Donnellan et al. (2005) have criticized our previous work by suggesting that laboratory findings are shaped by the artificial environment and therefore will often fail to generalize outside of the laboratory. Our previous work has provided evidence for the external validity of laboratory measures of aggression (Anderson & Bushman, 1997;

Anderson, Lindsay, & Bushman, 1999). Still, we deemed it important to conduct Study 3 as a naturalistic extension of our laboratory experiments. For Study 3, therefore, we used a nonlaboratory and naturally occurring situation in which students from a class were able to evaluate each other's work and influence each other's grade. Ego threat was not manipulated or artificially induced. Instead, it was measured in the form of naturally occurring feelings of humiliation after receiving comments on one's work from a fellow student. Similarly, the target of aggression was not an ostensible opponent in a computer game but rather a fellow student with whom participants actually interacted. All these changes made the events in Study 3 subjectively real and consequential: People were genuinely affected and sometimes humiliated by the criticisms they received of their actual class work, and they believed they could lower the grades of their evaluator by giving poor ratings to the feedback. If the findings of our laboratory work were artifacts stemming from the artificial nature of laboratory research, as some have suggested, then the results of Study 3 would be dramatically different from what had been found in the laboratory.

Method

Participants were 114 Dutch students (94 women) from a class of 285 students enrolled in an essay-writing section of the introductory psychology course. The course section required all students (a) to write an essay (e.g., on autism); (b) then, a few days later, to give written comments on one or, more typically, two fellow students' essays; and (c) again, a few days later, to assign a grade to the quality of the comments they *received* on their own essay from fellow students, on a 10-point scale (1 = *extremely bad* to 10 = *extremely good*). (In the Netherlands, grades are assigned using a 10-point scale rather than letters such as "A" and "B".) Students were instructed to focus the written comments on the structure, the logic of reasoning, and the writing style of their fellow students' essay. They were deliberately not given any objective criteria on which to base the grade they assigned to the quality of the comments they received so that they were free to give any grade they wanted. Participants were told that the grade they assigned to the quality of their fellow students' comments would determine 10% of the fellow students' final course grade. Participants knew the names of their fellow students who provided the feedback, but they met each other only once during a small group meeting at the beginning of the course.

Just after the course had started, students were asked to participate in our study in exchange for 5 euros (about \$7.50). After informed consent was obtained, participants were asked to complete the Narcissistic Personality Inventory (Raskin & Terry, 1988; coefficient $\alpha = .83$) and the Rosenberg (1965) Self-Esteem Scale (coefficient $\alpha = .87$). Sample items from the self-esteem scale are “I feel that I have a number of good qualities” and “I am able to do things as well as most people.” Items were answered using a 4-point response format. Scores are summed, with higher scores indicating higher levels of self-esteem. Participants were asked how humiliated the fellow students’ written comments on their essay made them feel (1 = *not at all* to 10 = *extremely*). These humiliation ratings provided the measure of experienced ego threat. We summed the raw item scores and then standardized them for Humiliation, Narcissism, and Self-esteem. Nonparticipants in this study also provided evaluations but declined to complete the personality scales and the humiliation ratings.

Because students could knowingly harm their fellow students by giving them a low grade for the quality of their comments, the grades provided us a real-world measure of aggression. More specifically, because the grades were reported only to the instructor rather than directly to the students, the grades provided a real-world measure of *indirect* aggression toward the person who evaluated their essay. After the course was over, participants were fully debriefed.

Results and Discussion

Participants were a representative subset of the total number of students in the essay-writing course on measured covariates. Participants did not differ from nonparticipants in terms of the teacher-assigned grade for the essay ($p > .39$) or in terms of the total amount of credits obtained during the college year ($p > .70$).

Table 3 presents the means, standard deviations, and correlations for the overall sample. We note that self-esteem and narcissism were related, $r = .40$, $p = .001$, that the correlation between self-esteem and grade was $.11$, $p = .13$, and the correlation between narcissism and grade was $-.008$, $p = .91$. The total sample size is $N = 204$ because the majority of the participants evaluated two partners.

We entered mean-centered self-esteem, narcissism, and humiliation scores and their two-way and three-way interactions into a regression equation predicting the grade given to each partner. The majority of the participants evaluated two partners, which can produce dependency in the data. Dependency does not affect the esti-

Table 3
Means, Standard Deviations, and Correlations for Study 3

	Correlation				Mean	SD
	Self-Esteem	Narcissism	Humiliation	Grade		
Self-esteem	1.00				0.00	1.00
Narcissism	0.40**	1.00			0.00	1.00
Humiliation	-0.16*	0.029	1.00		0.00	1.00
Grade	0.11	-0.008	-0.092	1.00	7.17	1.24

Note. $N = 204$ because the majority of the participants evaluated two partners.

* $p < .05$, ** $p < .01$.

mates of the regression coefficients, but it can lead to underestimates of the magnitude of standard errors of statistical tests and hence lead to liberal significance tests in which the actual alpha level exceeds the nominal alpha level (e.g., $\alpha = .05$; see Barcikowski, 1981). To address this issue, we used the complex sample procedure with robust maximum likelihood estimation available in Mplus (Muthén & Muthén, 2007). This procedure adjusts the standard errors for the design effect (Snijders & Bosker, 1999), which is a function of both the cluster size and intraclass correlation. The complex sample procedure provides a large sample test with proper standard errors so that significance tests properly maintain alpha at the desired nominal level.

The results showed effects of a Narcissism \times Self-Esteem interaction, $b = -0.20$, $z = -2.24$, $p < .02$, and a Humiliation \times Narcissism \times Self-Esteem interaction, $b = -0.42$, $z = 3.47$, $p < .001$ (see Figure 3). When humiliation and self-esteem were both high ($M + 1 SD$), aggression increased (i.e., assigned grade decreased) as the level of narcissism increased, $b = -0.68$, $z = -2.38$, $p < .02$ (see Figure 3). When humiliation was high ($M + 1 SD$) and self-esteem was low ($M - 1 SD$), aggression *decreased* as the level of narcissism increased, $b = 0.55$, $z = 3.78$, $p < .001$ (see Figure 3). Given that humiliation and narcissism both promote aggression, the negative link to self-esteem is yet another strike against the hypothesis that aggression stems from low self-esteem.

We also compared the key predicted values with the overall mean level of aggression in the study. At high levels of humiliation

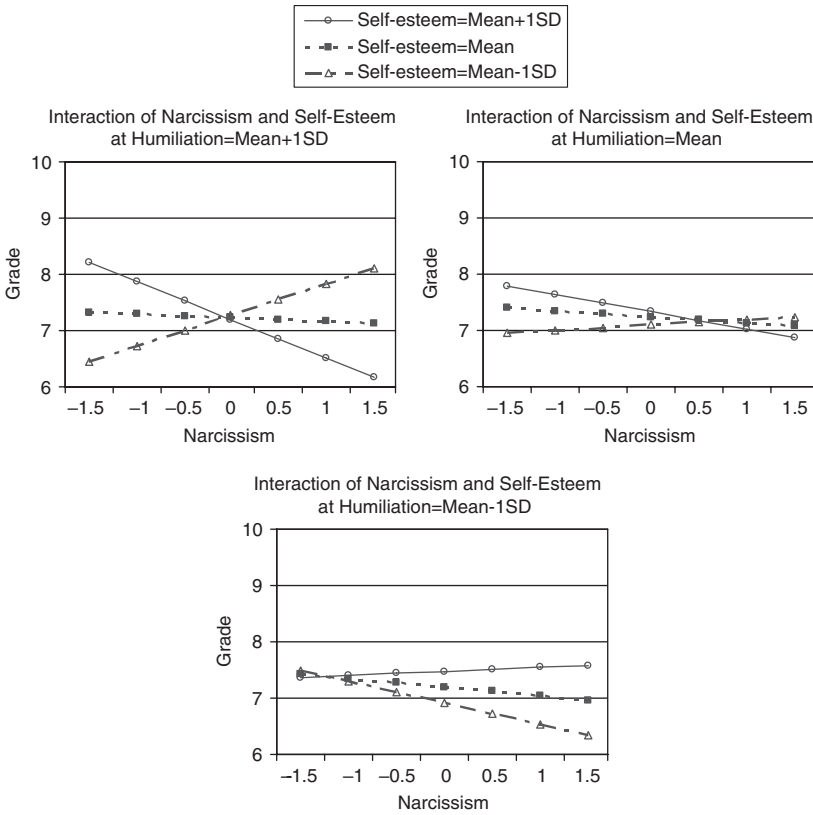


Figure 3

Relationship between narcissism and indirect aggression at high ($M + 1 SD$), moderate (M), and low ($M - 1 SD$) levels of self-esteem for low ($M - 1 SD$), moderate (M), and high ($M + 1 SD$) levels of humiliation (Study 3). Aggression was measured using the grade students assigned to their classmates for a course. Grades ranged from 1 (*extremely bad*) to 10 (*extremely good*). Lower grades indicate higher aggression levels.

($M + 1 SD$), high self-esteem combined with high narcissism produced more aggression than the study's overall mean, $z = -1.92$, $p < .06$, $d = 0.53$.

Once again, following Donnellan et al. (2005), we studied the relationship between self-esteem and aggression. The overall relationship between self-esteem and aggression, after controlling for narcissism, was $b = 0.12$, $z = 1.22$, $p < .23$, semipartial $r = .08$. We

also examined the conditional simple slope between self-esteem and aggression under optimal conditions for producing aggression, here high humiliation ($M + 1 SD$). At high humiliation, the conditional simple slope between self-esteem and aggression, holding narcissism constant, was $b = 0.12$, $z = 1.22$, $p < .23$, semipartial $r = .08$. In both analyses, low self-esteem was not significantly related to aggression.

These complementary findings clearly indicate that low self-esteem did not increase aggression when participants were provoked and the level of narcissism was relatively high. The most aggressive individuals were those high in both narcissism and self-esteem who had been made to feel threatened and humiliated. Low self-esteem appeared to attenuate or even reverse narcissistic aggression.

Meta-Analysis

To maximize power and minimize the effect of between sample fluctuations, we combined the results from the three studies meta-analytically. We used only those conditions that were optimal for aggression (i.e., high ego threat, direct aggression). Across the three studies (combined $N = 406$), high self-esteem combined with high narcissism to yield the highest levels of aggression. The average effect size (standardized mean difference) was $d_+ = 0.54$, with a 95% confidence interval ranging from 0.34 to 0.74. According to Cohen's (1988) conventional values, this is a medium-sized effect. Among individuals high in narcissism, higher self-esteem produced a significant increase in aggression. This may be considered the primary result from this investigation.

Combining all conditions in all three studies (combined $N = 526$, which includes the displaced aggression and low threat conditions where very little aggression was observed), self-esteem was not significantly related to aggression. The average semipartial correlation was .013, with a 95% confidence interval ranging from $-.073$ to $.099$, which includes the value zero. The corresponding magnitude of d was 0.026, with a 95% confidence interval ranging from -0.15 to 0.20 . This is nonsignificant and in the wrong direction for the hypothesis that low self-esteem leads to aggression. If one considers only those conditions that were optimal for aggression, the average semipartial correlation was .028, with a 95% confidence interval ranging from $-.058$ to $.11$. The corresponding magnitude of d was

0.056, with a 95% confidence interval ranging from -0.12 to 0.22 . Again, this effect is nonsignificant and in the wrong direction for the hypothesis that low self-esteem underlies aggression.

GENERAL DISCUSSION

Across three studies, we found no independent effect of self-esteem (high or low) on aggression—not even with our combined sample of over 500 participants. Rather, effects of self-esteem were only found in combination with narcissism. High self-esteem increased aggression among narcissists who received a threatening, negative evaluation. By far the most aggressive individuals were insulted participants with both high self-esteem and narcissism. This finding represents an advance over our previous work, for it shows that self-esteem does matter after all. But we still found no support for the view that low self-esteem causes aggression. To the extent that self-esteem contributed in any way to aggression, high self-esteem (in combination with other factors) increased aggression.

There was no evidence in any of the three studies that low self-esteem led to aggression. On the contrary, low self-esteem reduced or eliminated the independent effect of narcissism on aggression. These results fit the theory that there are different kinds of narcissism (e.g., Kernberg, 1975; Kohut, 1977) and that they differ as to self-esteem and aggressiveness, among other factors. Narcissists with low self-esteem may be shy, socially anxious and unconfident, and preoccupied with their own possible inadequacy, but they are still highly self-absorbed. The disparity between their dreams of grandeur and their feeling unappreciated may leave them bitter and resentful. In our findings, however (as in those of Wink, 1991, and others), they were not aggressive. In contrast, narcissists with high self-esteem are eager to dominate their social environment and claim the admiration to which they apparently feel entitled, and when their interaction partners fail to cooperate, they may turn aggressive. From this perspective, aggression may require both self-esteem and narcissism to be high, and low self-esteem seems to counteract the aggressive tendencies of narcissists.

We admire the Donnellan et al. (2005) work and share their puzzlement over the discrepancy between their results and ours. They suggested the reasons for the discrepancy lie in small effect sizes and

methodological issues. A small link between low self-esteem and aggression is conceivable, but we failed to find a significant link even with a combined N of 526, so if it is there in our data, the effect size was exceedingly small. Our estimated effect size was very close to zero, $d_+ = 0.012$, and it was in the wrong direction for their hypothesis. Our work has, however, emphasized aggression that retaliates for insulting provocation, and this leaves open the possibility that low self-esteem would yield slight increases elsewhere (e.g., unprovoked aggression). We found no evidence for this but cannot rule it out.

Methodologically, both our work and theirs have limitations. Donnellan et al. (2005) are correct that laboratory settings may convey subtle reassurances (such as that no one will really be harmed) that disengage some inhibitions about aggression. Nonetheless, our previous work has contradicted the notion that laboratory effects are trivial (Anderson & Bushman, 1997; Anderson et al., 1999; Konijn, Nije Bijvank, & Bushman, 2007). Moreover, and crucially, our Study 3 is a nonlaboratory field study in which aggression had genuine consequences, and it still contradicted the hypothesis that low self-esteem increases aggression. After controlling for narcissism, the remaining weak relationship between self-esteem and aggression still pointed to a positive rather than negative relationship. This relationship was opposite in direction in all three studies to that predicted by Donnellan et al. in all three studies, although it only attained statistical significance in Study 3. Overall, it was high self-esteem, in combination with high narcissism and ego threat or humiliation, that produced the most aggression.

Donnellan et al.'s (2005) methods are several steps removed from the direct observation of real-world violence, and this might be an important factor. They found that children with high self-esteem were less likely than others to admit to antisocial behavior; such relations could be due to reporting biases. Self-report studies have found that people with high self-esteem claim to be more intelligent, more attractive, better liked, and more socially skilled than others, whereas objective and laboratory measures (such as IQ tests and peer ratings) have repeatedly discredited these claims (Baumeister, Campbell, Krueger, & Vohs, 2003; Brockner & Lloyd, 1986; Buhrmester, Furman, Wittenberg, & Reis, 1988; Diener, Wolsic, & Fujita, 1995; Gabriel, Critelli, & Ee, 1994). Thus, many self-report effects of self-esteem may say more about claiming styles than about objective

behaviors. To their credit, Donnellan et al. also report relationships between measures collected from different raters that are far less subject to spurious results. However, these raters' reports of getting into fights could, in principle, refer entirely to self-defense, which would be consistent with past evidence that people with low self-esteem are often the targets of aggression by others rather than initiators of aggression (e.g., Egan & Perry, 1998; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999). Donnellan et al.'s data were silent on this issue of who started the relevant fights. Differences in how aggression is measured might also shed light on this debate (e.g., Webster & Kirkpatrick, 2006).

Even cultural factors may be relevant. Donnellan et al.'s (2005) findings were obtained in New Zealand, whereas our samples have been North American and European. In that connection, it is useful to consider recent findings with another New Zealand longitudinal study. Boden, Fergusson, and Horwood (2007) found that low self-esteem among New Zealand youth, measured at ages 10 and 15, had a significant though small link to higher rates of violent offending, both self-reported and as rated by significant other informants, at ages 18, 21, and 25. However, when the researchers controlled for Maori ethnicity, parents' education, and other family background factors that were potentially confounded with self-esteem, the relationship dropped to nonsignificant despite their large sample. They also found that unstable high self-esteem predicted greater violence, and this relationship remained significant after correcting for the same potential confounds. Thus, it was possible to link low self-esteem to aggression in these New Zealand data, but the relationship was mainly due to other, confounding factors and vanished once statistical corrections were made—whereas the link between unstable high self-esteem (conceptually associated with narcissism) and aggression proved more robust.

We suspect, nonetheless, that the correct resolution may reflect theoretically meaningful processes rather than methodological artifacts. People with low self-esteem may get into fights when others initiate the physical aggression, and this victimization could lead to further loss of esteem, thus creating a vicious circle. Thus, people with low self-esteem could well get into plenty of fights (as Donnellan et al., 2005, observed) but without initiating aggression (as our studies indicate). Narcissism, in contrast, may lead to aggressively attacking others in response to real or imagined disrespect, and if the

violence succeeds in silencing criticism, there may be another vicious circle. Thus we could have bidirectional causality in both cases, with low self-esteem and high narcissism linked to more fighting, although only the narcissist with high self-esteem is initiating those fights. That would also explain why our controlled studies repeatedly point toward threatened egotism as the main cause of aggression, because these studies measure the initiation of aggression.

Another possible resolution focuses on behavioral breadth. Whereas our work focused narrowly on aggression, Donnellan et al.'s (2005) was more extensive with regard to broadly antisocial behaviors. Different underlying processes are entirely plausible. Low self-esteem may foster a tendency to break society's rules because one does not regard oneself as likely to become successful even if one were to try. Thus, low self-esteem may make people willing to violate norms. Meanwhile, direct aggression stems mainly from threatened egotism, and so we repeatedly find that narcissism (in combination with high self-esteem) impels people to lash out when someone questions their favorable self-views.

To conclude, the present work presents several advances over our previous findings and requires the rethinking of some conclusions in that previous work. We may have been too quick in our earlier published writings to dismiss self-esteem as irrelevant to aggression (but see Footnote 1). Although its effects are not large, it appears that self-esteem can combine with narcissism to influence levels of aggression. In particular, narcissism plus high self-esteem produce the highest levels of aggression. Our findings also support prior theoretical and empirical work (e.g., Kohut, 1977; Wink, 1991) proposing that there are different varieties of narcissism, and these types may be differentially related to aggression. The covert or low-self-esteem variety of narcissism appears not to foster aggressive responding. In contrast, narcissists with high self-esteem, which is to say the so-called overt narcissists, appear to be exceptionally aggressive when criticized.

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